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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,236	12/22/2000	Yoshihiko Suemura	043034/0163	7174
22428	7590	03/17/2005	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			HENNING, MATTHEW T	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/742,236	Applicant(s) SUEMURA, YOSHIHIKO	
	Examiner Matthew T Henning	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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This action is in response to the communication filed on 12/6/2004.

DETAILED ACTION

1. All rejections and objections not specifically presented below have been withdrawn.
2. Claims 1-19 have been examined.

Title

3. The title of the invention is acceptable.

Priority

4. The application has been filed under Title 35 U.S.C §119, claiming priority to Japanese application 11-367830, filed December 24, 1999.
5. The effective filing date for the subject matter defined in the pending claims in this application is December 24, 1999.

Information Disclosure Statement

6. The information disclosure statements (IDS) submitted on 3/22/2001 and 9/5/2003 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

Drawings

7. The drawings filed on 7/30/2002 are acceptable for examination proceedings.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiragaki (U.S. Patent Number 5,663,820), and further in view of Manchester et al. ("IP Over SONET") hereinafter referred to as Manchester.

Shiragaki disclosed an optical switch with multiple input and output interfaces (See Shiragaki Fig. 3 Elements 19, 31, and 32) but Shiragaki failed to disclose a scrambler and descrambler at each input and output interface. Shiragaki did disclose that this switch is for a Synchronous Optical NETwork (SONET).

Manchester disclosed that in order to send IP data over a SONET, the bits being transmitted should be randomized and Manchester recommended that the pseudo-random Self-Synchronizing Scrambler and Descrambler, used in ATM on SONET, should be used for this purpose (See Manchester Page 139 Col. 1 Paragraph 4 and Figure 4). Manchester further disclosed that this scrambler is reset at startup (See Manchester Page 139 Col. 2 Paragraph 1).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Manchester to the invention of Shiragaki by placing self-synchronizing scramblers at the inputs and outputs of the switch of Shiragaki. This would have been obvious because the ordinary person skilled in the art would have been motivated to provide a randomized bit stream to the optical fiber in order to thwart malicious attacks directed towards controlling the transition density of the line and to ensure that line rate recovery was possible at the receiver.

Furthermore, in this combination, because the scramblers are all connected to the inputs of the same switch, it would have been inherent that they all simultaneously reset at the startup of

the switch. It would also have been inherent that the descramblers be simultaneously reset after a propagation delay of the data through the switch. This would have been inherent due to the nature of the descrambler being initialized by the scrambled data input to the descrambler.

10. Claims 2- 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shiragaki and Manchester.

11. Claim 2 recites that the scramblers and the descramblers operate according to a predetermined system clock (it was inherent that the scramblers and descramblers operated according to a predetermined system clock in order for the shift registers of Manchester Figure 4 to operate as required by the scramblers), wherein the scramblers are simultaneously initialized at a first time point and thereafter are not reset (See Manchester Page 139 Col. 2 Paragraph 1), and the descramblers are simultaneously initialized at a second time point and thereafter are not reset, wherein the second time point is delayed from the first time point by a time period required for transferring a frame from an input interface to an appropriate output interface through the switch. It was inherent that the descramblers were initialized at a point in time after the initialization of the scramblers because the descramblers are initialized by the output of the scramblers, which is received through the switch after a propagation delay (See Manchester Page 139 Col. 2 Paragraph 1).

12. Claim 3 recites that the first time point is a time when the switching system starts up (See Manchester Page 139 Col. 2 Paragraph 1).

13. Claim 4 recites that the scramblers and descramblers are of frame synchronizing type. Manchester disclosed that the scrambling state at the end of a Synchronous Payload Envelope (SPE) (frame) is the beginning state for the next SPE (See Manchester Page 139 Col. 1

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Paragraph 7 – Col. 2 Paragraph 1). Therefore, each the descrambler received a synchronization state for a frame through the previous frame and was therefore frame synchronizing.

14. Claim 5 recites that a cycle of a pseudorandom pattern generated by the predetermined pseudorandom pattern generator is set to be longer than a length of the frame. Manchester disclosed that the scrambling state at the end of a SPE is the beginning state for the next SPE (See Manchester Page 139 Col. 1 Paragraph 7 – Col. 2 Paragraph 1). Therefore the pseudorandom pattern generated in the scrambler was longer than the length of an SPE (frame).

15. Claim 6 recites that the predetermined pseudorandom pattern generator uses a generator polynomial $1 + X^{43}$ (See Manchester Page 139 Col. 1 Paragraph 4 and Figure 4).

16. Claim 7 recites generating a scrambler state (held in the 43-bit shift register shown in Manchester Figure 4) indicating a pseudorandom pattern generated by the predetermined pseudorandom pattern generator (the scrambler) at predetermined intervals; sending the scrambler state to the scramblers so that the scramblers are simultaneously reset to the pseudorandom pattern indicated by the scrambler state (See Manchester Figure 4 Feedback line to the front of the register); and sending the scrambler state to the descramblers with a delay of a time period required for transferring a frame from an input interface to an appropriate output interface through the switch so that the descramblers are simultaneously reset to the pseudorandom pattern indicated by the scrambler state (See Manchester Page 139 Col. 1 Paragraph 7 – Col. 2 Paragraph 1).

17. Claim 8 is rejected for the same reasons as claim 4 above.

18. Claim 9 is rejected for the same reasons as claim 5 above.

19. Claim 10 is rejected for the same reasons as claim 6 above.

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20. Claim 11 is rejected for the same reasons as claims 1 and 7 and further because Manchester disclosed assembling a frame and then sending it with the output of the scrambler, which is the scrambler state (See Manchester Page 140 Col. 1 Paragraph 2). Also, because the scrambler operates on frames from the HDLC framer, and also generates the pseudo-random pattern used for scrambling, the generator operates in frame timing.
21. Claim 12 recites that the scramblers are of self-synchronizing type (See Manchester Page 149 Col. 1 Page 4).
22. Claim 13 is rejected for the same reasons as claim 4 above.
23. Claim 15 is rejected for the same reasons as claim 5 above.
24. Claim 16 is rejected for the same reasons as claim 6 above.
25. Claims 17 and 18 are rejected for the same reasons as claims 1 and 7 wherein the reset pulse claimed is constituted by the feedback loop of Manchester Figure 4.
26. Claim 18 is rejected for the same reason as claims 1 and 7 above.
27. Claim 19 is rejected for the same reasons as claim 11 above wherein the reset circuit is constituted by the receiver in Figure 4 of Manchester.

Response to Arguments

28. Applicant's arguments filed 12/6/2004 have been fully considered but they are not persuasive.
29. Applicant argues primarily that:
- a. The combination of Shiragaki and Manchester would not function properly.
 - b. Manchester did not disclose resetting the scramblers simultaneously and resetting the descramblers simultaneously.

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- c. Manchester did not disclose at each scrambler attaching a scrambler internal state and synchronizing the descrambler with the scrambler using the internal state.

30. Regarding applicants argument a. that the combination of Shiragaki and Manchester would not function properly, the examiner does not find the argument persuasive. This is because only attorney arguments were provided to show that the combination would not function properly. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. In this case, attorney arguments against the operability of the combination of Shiragaki and Manchester are not sufficient as evidence of such. Therefore, the examiner does not find the arguments persuasive. As such, the examiner has maintained the rejections presented above.

31. Regarding applicants argument b, with regards to claims 1-10, and 16-18, that Manchester did not disclose resetting the scramblers simultaneously and resetting the descramblers simultaneously, the examiner does not find the argument persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant did not consider the combination of Shiragaki and Manchester, but instead only looked to Manchester for the limitations as claimed. As such, not

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all the limitations were found. However, the limitations are shown above in the combination of Shiragaki and Manchester. Therefore, the examiner has maintained the rejections presented above.

32. With regards to the applicant's argument that Manchester did not disclose sending a frame pulse to scrambler/descrambler in order to reset the scrambler, the examiner does not find the arguments persuasive. Manchester disclosed that upon startup the scrambler/descrambler would be reset by the first 43-bits of data input into the scrambler/descrambler (see Manchester Page 139 Col. 1 Paragraph 7 – Col. 2 Paragraph 1). Therefore, in the combination of Shiragaki and Manchester, upon startup of the switch, the scramblers/descramblers must have been simultaneously reset by the first 43 bits (frame pulse) into each scrambler and descrambler. Therefore, the combination of Shiragaki and Manchester meet the limitation of resetting the scramblers and descramblers by sending a frame pulse to each, and therefore the examiner has maintained the rejection presented above.

33. With regards to the applicant's argument that Manchester did not disclose sending a scrambler internal state to scrambler/descrambler in order to reset the scrambler/ descrambler, the examiner does not find the argument persuasive. Manchester disclosed that upon startup the scrambler/descrambler would be reset by the first 43-bits of data the scrambler/descrambler received (See Manchester Page 139 Col. 1 Paragraph 7 – Col. 2 Paragraph 1). Manchester also disclosed that the scrambler state was fed back to the scrambler in order to properly synchronize the scrambler/descrambler (See Manchester Col. 1 Paragraph 7 – Col. 2 Paragraph 1). Therefore, when the switch of Shiragaki and Manchester was reset the scrambler state was fed back into the scramblers/descramblers for the first 43 bits in order to reset the

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scramblers/descramblers. Therefore, Shiragaki and Manchester met the limitation of sending a scrambler internal state to scrambler/descrambler in order to reset the scrambler/ descrambler, and therefore the examiner has maintained the rejection presented above.

34. Regarding applicants argument c, with regards to claims 11-15, and 19, that Manchester did not disclose at each scrambler attaching a scrambler internal state and synchronizing the descrambler with the scrambler using the internal state, the examiner does not find the argument persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant did not consider the combination of Shiragaki and Manchester, but instead only looked to Manchester for the limitations as claimed. As such, not all the limitations were found. However, the limitations are shown above in the combination of Shiragaki and Manchester.

Furthermore, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., attaching a scrambler internal state to a frame, receiving the internal state) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the claims, there is no recitation of "scrambler internal state", but instead there is a "scrambler state". These limitations are not supported by the claims and are therefore not addressed. Therefore, the examiner has maintained the rejections presented above.

Conclusion

35. Claims 1-19 have been rejected.
36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- d. Fujimura et al. (U.S. Patent Number 4,744,082) disclosed a synchronizing multiplexed encoding optical switch.
- e. Pospischil (U.S. Patent Number 4,774,104) disclosed a self-synchronizing scrambler.
- f. McNesby et al. (U.S. Patent Number 5,185,799) disclosed a SONET scrambler.
- g. Bergland et al. (U.S. Patent Number 5,317,658) disclosed an optical switch.
- h. Suemura et al. (U.S. Patent Number 5,687,181) disclosed a parallel error correction coder for use in a switch.
- i. Lang (U.S. Patent Number 5,835,602) disclosed a self-synchronous packet scrambler to be used with a SONET.
- j. Choi ("Parallel Scrambling Techniques for Digital Multiplexers") disclosed parallel synchronous frame encoding and decoding.
- k. Japanese Application 11127120 depicted an optical switch with encoders and decoders at the inputs and outputs of the switch.

37. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**


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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Matthew Henning
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3/8/2005



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